



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,974	10/30/2001	John R. Graber JR.	LYB 2 0021-3	2485

7590 06/23/2004

Thomas E. Kocovsky, Jr.
FAY, SHARPE, FAGAN, MINNICH & McKEE, LLP
Seventh Floor
1100 Superior Avenue
Cleveland, OH 44114-2518

EXAMINER

TRIEU, THERESA

ART UNIT	PAPER NUMBER
----------	--------------

3748

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/021,974

Applicant(s)

GRABER, JOHN R.

Examiner

Theresa Trieu

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 and 31-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-27 and 43 is/are allowed.
- 6) ☒ Claim(s) 31-42 and 44-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office Action is responsive to the applicants' amendment filed on March 29, 2004.

Claims 1, 31, 33, 34, 39, 40, 41, 43 and 45 have been amended. Claims 28-30 have been withdrawn. Overall, claims 1-27 and 31-47 remain under consideration in this office action.

The amendments and arguments presented by the applicant have been duly noted; however, a new non-final Office Action is set forth below. The previous indication of allowability of claims 39, 40 and 41 is hereby withdrawn. An updated search and further review of the prior art of record has prompted the new rejection.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 31-34, 39-42, 44 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Mowli (Patent Number 4,792,294).

Regarding claims 31-34, 39, 40 and 41 as shown in Fig. 1, Mowli discloses a vacuum pump comprising: a pump chamber defining an inlet port (14) and an exhaust port (18); a first and second rotors (42) each including a set of screw threads; a lobe (36) mounted to the first rotor adjacent the inlet port and a channel (not numbered; however, clearly seen in Fig. 1) defined in the second rotor adjacent the inlet port; the lobe and the channel being different from the first and second helical threads; the lobe and channel matingly engaging during rotation of the rotors; the first and second rotors each including teeth which mesh together and move a fixed

Art Unit: 3748

volume of gas from the inlet port (14) to the exhaust port (18); the lobe is integral (see col. 5, line 1-3) with a first center shaft (26, 28); the lobe (36) comprising an insert secured to a first center shaft section (26); a first/second lobe (36) mounted to the second/first rotor (38) and a first/second channel (not numbered; however, clearly seen in Fig. 1) defined in the first/second rotor (42) with respectively.

Regarding claims 42 and 44, Mohr further discloses the suction section (42) reduces the power consumed to move the volume of gas through the pump chamber and increases pump efficiency; a manifold (43- see col. 7, line 49-52) connecting the exhaust port (43) with a high pressure exhaust port.

The method claim 45 is inherent in the operation of the Mohr device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 35-38, 46 and 47 rejected under 35 U.S.C. 103(a) as being unpatentable over Mowli '294 in view of legal precedent.

Regarding claims 35-38, 46 and 47, Mowli discloses the invention as recited above; however, Mohr fails to disclose a shape of the lobe and the channel. It would have been an obvious matter of design choice to have utilized the lobe and the channel being a V-

Art Unit: 3748

shaped/radius shaped the since it has been held that a change in the shape of the element involves only routine skill in the art. *In re Dailey*, 149 USPQ 47 (CCPA 1966).

Allowable Subject Matter

3. Claim 43 is allowed.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of two patents.

Wycliffe (Patent Number 4,504,201) discloses multistage pumps.

Troup (Patent Number 5,846,066) discloses vacuum pumps with claw-type rotor and roots type rotor near the outlet.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa Trieu whose telephone number is 703-308-6434. The examiner can normally be reached on Monday-Thursday 7:30am- 6:00pm - Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E Denion can be reached on 703-308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3748

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TT



Theresa Trieu

Patent Examiner

Art Unit: 3748